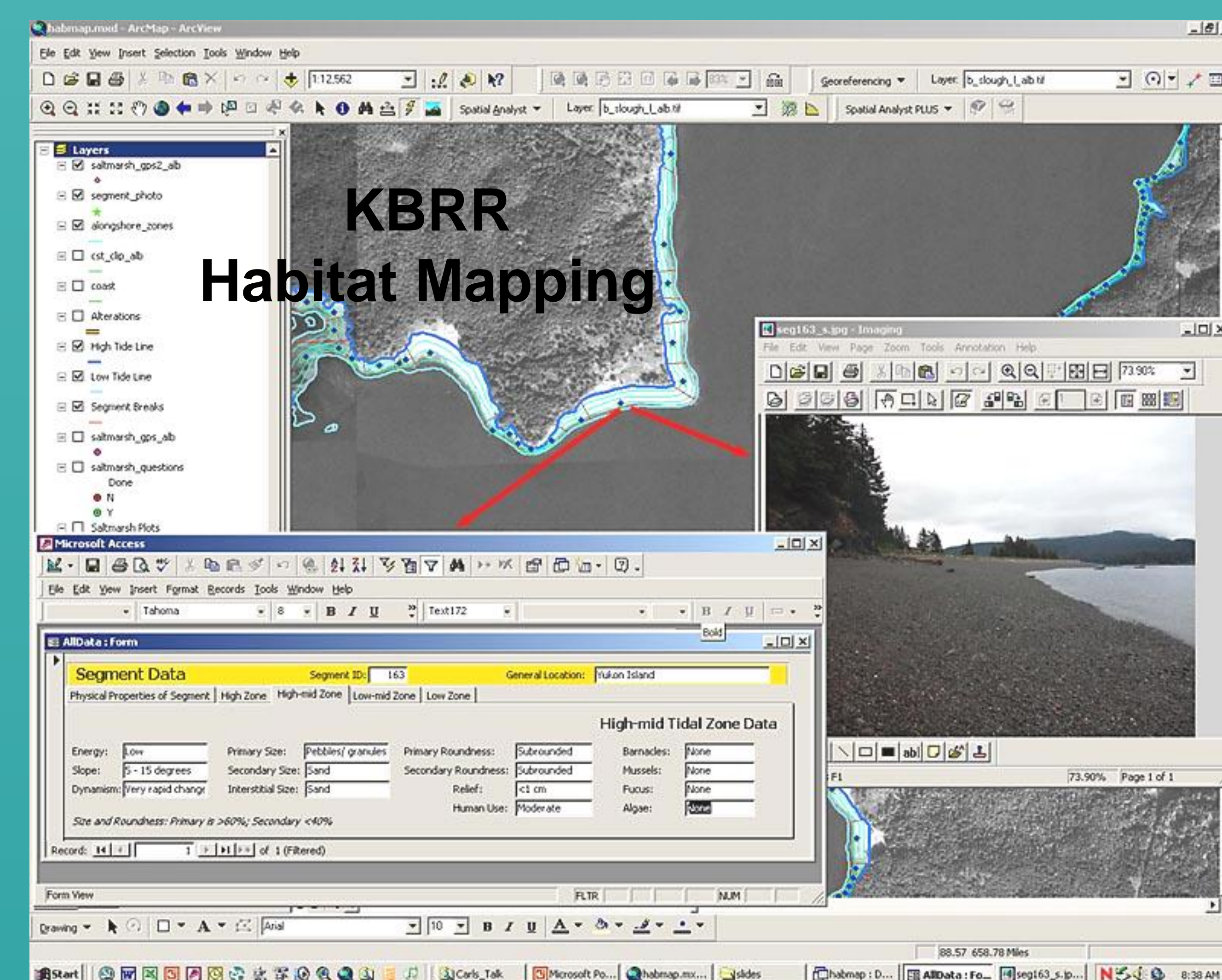


Community Involvement in Coastal Monitoring: Linking Shoreline Mapping with Community Monitoring

Steve Baird¹ and Marilyn Sigman²

Shoreline Mapping

As part of GEM, Kachemak Bay has been included in both extensive aerial shoreline mapping (ShoreZone-<http://www.coastalaska.net/>), and more intensive and highly-detailed mapping (Kachemak Bay Research Reserve's Intertidal Habitat Mapping).



Mapping efforts produce detailed information, but this information represents a snapshot in time. Monitoring efforts allow for detection of change.

What can community members contribute?



CoastWalkers observe and document outfalls and water pollution from other sources, areas of active erosion or deposition, structures, and uses of the beaches such as fire rings, vehicle tracks, and fish or wildlife harvesting. They provide information important in coastal land and water use planning and regulation.



Documentation of Physical Changes & Human Activities



Detecting significant changes in diversity or abundance in dynamic marine invertebrate and seaweed communities requires rigorous and intensive sampling. CoastWalk protocols will be revised to enable trained citizen monitors to contribute to “early warnings” of widespread geographic changes in indicator species that are sensitive to changes in ocean and nearshore conditions.

Monitoring Changes in Intertidal Communities



Counts

CoastWalk counts of birds will focus on species generally found close to shore and which have a high fidelity to particular shoreline segments (black oystercatchers, goldeneyes, harlequin ducks, mergansers, and nesting bald eagles) by trained citizen observers.



Marine mammal counts can provide trend and seasonal habitat use information.



Observations of Beachcast Animals

Observations of dead birds and mammals to suggest temporal trends and possible causes of mortality for these species are included in the GEM monitoring protocols and will be incorporated into CoastWalk protocols for trained observers. Sea otter skulls have been collected in Prince William Sound and elsewhere in Alaska for 20 years and have proven helpful in evaluating trends in the abundance of sea otters..

Coastal Stewardship

Reporting Unusual Events and Non-Native Invasives

Dramatic changes in the relative abundance of the flat-bottomed sea star (*Asterias amurens*) and jellyfish species have been observed By CoastWalkers in Kachemak Bay. Revised protocols will collect more quantitative information on unusual occurrences or mortality events.



Beach and Marine Debris Clean-ups



During the last five annual efforts, CoastWalkers removed an estimated 5,000 pounds of marine debris from Kachemak Bay beaches.

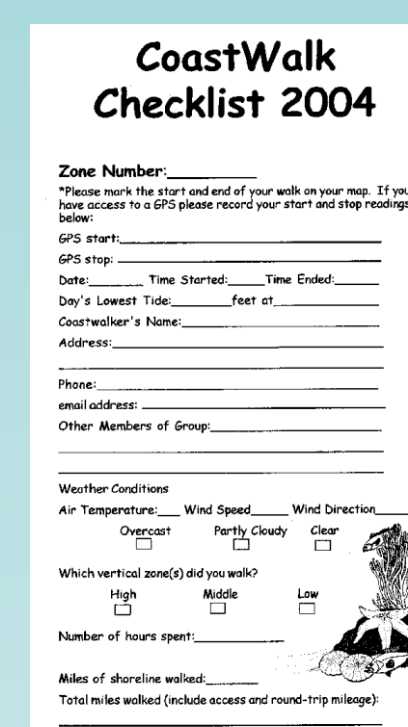


Kachemak Bay CoastWalk – A Model Citizen Monitoring Program

Local Volunteer Beach Surveys and Cleanup



The Center for Alaskan Coastal Studies has sponsored an annual CoastWalk for 20 years in Kachemak Bay. The goals of the program are to increase community awareness and to collect survey information about dynamic beach environments in a context of natural cycles and human activities.



Evaluation of Citizen-Collected Data and Refinement of Protocols

The Center for Alaskan Coastal Studies contracted with Tom Dean of Coastal Resource Associates to evaluate 20 years of existing data collected during the annual Kachemak Bay CoastWalk.

This analysis resulted in suggested modifications to the CoastWalk protocol. These changes are being implemented over several years and will improve the quality and reliability of data collected during CoastWalk.

Integration With GEM



- ❖ Historical data are being georeferenced and incorporated with ShoreZone mapping and more detailed habitat mapping completed by the Kachemak Bay Research Reserve (KBRR) in the KBRR GIS.
- ❖ CoastWalk data collection procedures will be aligned with GEM nearshore monitoring protocols.
- ❖ A website is being developed to support a community monitoring network.



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